

# East of the Elbe

**I**N ADDITION to literature covered by *Excerpta Medica*, by the Russian Translation Service sponsored by the Public Health Service, or by private enterprise, a number of medical publications issued in Communist territories are the subject of notes, abstracts, or full translations which appear twice a month in *Scientific Information Report* (mimeographed), sold by the Office of Technical Services, U.S. Department of Commerce, for \$2.75 a copy or \$28 a year.

In keeping with the intent of Congress, these translation services aim not to distribute information directly to a large audience but to provide librarians, editors, reporters, and scientific investigators with access to original materials, if desired.

The following selections from the medical literature which is covered in the *Scientific Information Report* from July 25, 1958, through January 23, 1959, are intended only to suggest the kind of public health information that may be found. They are merely a sample of a sample.

There is no intent to evaluate the significance or validity of the items mentioned.

In the following paragraphs, reference to specific documents is given as follows: the name of the senior author, the publication number of the *Scientific Information Report*, and the document number. All issues of the report are designated by the code number PB 131891-T. The reference (*Frucht 14, 79*) would therefore refer to PB 131891-T14; item 79, a translation from *Das Deutsche Gesundheitswesen*.

## Service Statistics

Goals of the Sanitary Epidemiological Service for 1959-65 were reported to the All Union Scientific Society for Hygienists, in Mos-

cow, February 21, 1958. Objectives include 1 epidemiologist per 25,000, 1 sanitary physician per 40,000, 1 industrial sanitarian per 14,000 workers, 1 school sanitarian per 12,000 urban students, and 1 physician bacteriologist per 35,000 (*Lebedev 5, 94*).

Long-range public health plans for Kazakh S.S.R. call for 24,800 more medical personnel by 1965, a 13-percent increase. It is hoped to double the number of health officers: at present, there is 1 for every 70,000 people. This report contains considerable data on hospitals and medical facilities (*Lobova 2, 77*).

## Morbidity

The first all-Russian conference of epidemiologists, microbiologists, and infectionists was held in Moscow in 1957. The 400 delegates and guests approved establishment of an all-Russian scientific medical society for the professions represented.

Nikolayeva, R.S.F.S.R. Deputy Minister of Health, reported complete eradication in the Russian Soviet Federated Socialist Republic of plague, cholera, typhus, smallpox, and other infectious diseases. She said that mass outbreaks of typhoid fever and malaria had ceased. The major concerns she reported were influenza, tickborne encephalitis, poliomyelitis, epidemic hepatitis, and prevention of dysentery, typhus, and diphtheria.

Professor Boldyrev stressed the need to improve sanitary conditions, to improve cultural levels, and to sharpen differential diagnosis of enteric diseases in a program to reduce enteric infections. Reports by Smorodintsev, Tokarevich, and Bunin dealt respectively with virology, rickettsioses, and clinical management of dysentery (*Belikov 7, 87*).

Uzbekistan now boasts 188 sanitary-epidemiological stations, 160 bacteriological labora-

tories, and 33 pasteurization stations. Registered cases of malaria have dropped from 121,000 in 1950 to 659 in 1956. Smallpox has been "liquidated" since 1936 (*Zairov 9, 57*).

Diphtheria in Byelorussia was reported in 1957 to be 9.8 per 10,000 population, 30.6 percent below the 1956 rate (*Rubinshteyn 4, 41*).

### Environmental Services

In recommending filtration and active dilution of air pumped out of nuclear reactor power stations, a Czechoslovakian paper concludes it is necessary to develop less hazardous types of reactors (*Anon. 2, 67*).

The first "scientific-practical" conference on sanitary inspection of food products for the entire Soviet Union was held in Moscow in June 1958. (Reports of the principal speakers are summarized lightly in the translation.) Leading causes of "food poisoning" were bacterial infection, primarily of meat, followed by dairy products (*Krapivner 16, 84*).

A Committee for the Protection of Atmospheric Air has been established in the Main State Sanitary Inspectorate of the U.S.S.R. Ministry of Health by an order dated May 5, 1958. Chairman is Prof. V. A. Ryazanov, director of the chair of communal hygiene of the Central Institute for the Advanced Training of Physicians (*Anon. 10, 91*). A book on air pollution control, published in 1957, is the subject of a translated review (*Gernet 10, 93*).

Gamma rays are used to sterilize bandages impregnated with antibiotic medication, by the Division of Antiepidemic Defense of the Central Scientific Research Disinfection Institute. The dose to inactivate anthracoid spores is reported to be 1.5–2.0 million roentgens (*Anon. 5, 66*).

Studies of radiopotassium ( $K^{40}$ ) find  $2.3 \times 10^{-11}$  curies per liter in mixed city sewage,  $6 \times 10^{-12}$  in suburban sewage, and  $1.7 \times 10^{-11}$  curies in sewage from industrial areas. In nature,  $K^{40}$  in city sewage is thought to be in the range of  $6 \times 10^{-12}$  curies per liter. The per capita discharge in the city is estimated at 300 micrograms of  $K^{40}$  per day, about  $2 \times 10^{-9}$  curies (*Dolivo-Dobrovolskiy 6, 50*).

Nonpathogenic spore soil saprophytes re-

sistant to chlorination in a public water supply of the Donbassvodrest have created difficulties in applying the bacterial count standards for water quality. An investigation is reported in detail (*Natanson 16, 82*).

### Preventive Medicine

Merger of rayon hospitals with sanitary-epidemiological stations was discussed at the fifth congress of the Medical Workers' Trade Union, Moscow, May 29, 1958. Golovkova said that with the present workload, a medical district physician has no time to organize preventive work. Popov said that mergers have been beneficial in rural districts, but that the distribution of the physician's work is unsolved.

Delegates also complained that too little attention is given to the health and safety of medical workers, that the Ministry of Health issues directives without enforcing their application. Research workers were chided for giving too little heed to public health needs, but Suchkova in turn chided public health workers for failing to keep up with medical advances.

In order to extend the effectiveness of medical services, with an average of 1 physician for 600 people, M. D. Kovrigina, Minister of Health, urged strengthening outpatient clinics, and said they must arrange to eliminate waiting lines and to treat people in the evenings or on their day off from work. The number of physicians may be increased at the expense of auxiliary branches of the profession. Also, she proposed reduction of the volume of paperwork by doctors.

She and others stressed the value of health education. It was asserted that more than 500,000 medical deputies of Red Cross and Red Crescent societies are seeking to provide health information for the public.

The conference voted approval of a resolution supporting suspension of nuclear tests (*Anon. 4, 54*).

Of 684 themes announced for 86 hygienic establishments of the R.S.F.S.R. Ministry of Health, 284 deal with labor hygiene and prevention of occupational disease. The balance of the score card is: radiation hygiene, 102; water hygiene, 99; hygiene for children and

adolescents, 57; nutrition and food sanitation ("the rational use of food for separate groups of the population and the prophylaxis of alimentary diseases"), 55; the hygienic basis for planning, organization, and construction, 44; atmospheric hygiene, 43 (*Anon. 5, 98*).

Concerned with "the great practical significance of protecting persons from respiratory affection with bacterial toxin," an investigation is studying this potential in *Bacillus botulinus* toxin, "which has no equivalent in strength" (*Yakovlev 5, 56*).

For potential rabies victims, it is recommended that antirabies gamma globulin containing specific antibodies be applied directly to the wound, in conjunction with antiseptics and antibiotics, before administration of the vaccine. (*Solov'yev 3, 52*).

A lozenge held to be prophylactic against streptococci, staphylococci, and other microbes consists of 1,000 gamma gramicidin, 0.07 gram ascorbic acid, 0.002 gram tannin, and 1 gram of sugar and filler (*Anon. 2, 72*).

Persistence of rabies, especially among foxes and other wild animals, has prompted production of a hyperimmunization serum by the State Institute for Rabies Inoculation at Potsdam (*Starke 10, 81*).

Aerosols of volatile oils in a sealed room were found to be effective against *Staphylococcus albus* at Kiev. Eucalyptus appeared to be the most effective oil tested; lavender the least (*Vedibeda 8, 70*).

Production of diagnostic materials in the Soviet Union is deficient with respect to brucellosis, tularemia, and many viral and rickettsial diseases (*Meshalova 9, 72*).

Immunization against brucellosis can be combined with simultaneous subcutaneous inoculation against tetanus, investigators in Moscow conclude on the basis of animal experiments (*Chian Shun-ch'u 16, 74*).

## Epidemiology

Among measures recommended at the 12th session of the U.S.S.R. Academy of Medical Sciences, it was proposed: A statistical bureau for the study of the role of population factors in pathology and for working out the methodological indexes for the study of hereditary

diseases should be established in the Institute of the Organization of Public Health. A laboratory of the heredity of man and a laboratory of radiobiology should be organized within the Institute of Experimental Biology and the Institute of Experimental Medicine, U.S.S.R. Academy of Medical Sciences (*Anon. 6, 63*).

Pathology, immunology, and mode of transmission of influenza is being investigated, with respect to the biological and colloid-chemical properties of a virus aerosol trapped in a sponge filter made of gelatin (*Rechmenskiy 1, 68*).

The mucous membrane of the nose is the essential point of infection of animals susceptible to hoof-and-mouth disease, it is concluded from experiments in pathology reviewed for the Thuringian Section of the Scientific Society for Veterinary Medicine in East Germany (*Potel 6, 61*). (This entire review is published in translation.)

## Occupational Health

A review of dissertations on labor hygiene by candidates for science degrees found the following topical interests most prominent, in the order given: occupational poisons, industrial dust, physiology of labor, microclimate, industrial trauma, and a miscellany including changes in atmospheric pressure, noise and vibration, morbidity, research methods, and sanitation. The author noted with regret that although the economy requires an increased production of insecticides, only three dissertations related to their toxicity (*Yegorov 16, 85*).

Foam rubber is found satisfactory as a dust filter in face masks tested at the Leningrad Sanitary Hygienic Medical Institute. The filter can be washed with ordinary soap and water and used again effectively, but it offers no "satisfactory standard for pore size" (*Koryukayev 7, 66*).

A cherry-extract drink is found more effective than a 0.5-percent gaseous solution of salt for quenching thirst, preventing dehydration, and maintaining efficiency of men working in high temperatures, according to a Tashkent study, at a Uzbek metallurgical plant. The drink is now the customary beverage in shops where heat is intense (*Anon. 8, 79*).

Neurophysiological effects of vibrations are the general subject of a series of experiments reviewed in one chapter of a book issued by the State Publishing House of Medical Literature, Leningrad (*Mogendovich 9, 84*).

Protracted systematic vibration retarded the accumulation of body weight in young rats in an experiment performed at the Moscow Sanitary Hygiene Medical Institute (*Lebedeva 7, 65*).

A chemical called Unitol was reported effective in treating 25 clinic patients suffering from absorption of arsenic and mercury compounds (*Belonozhko 1, 60*).

### Diagnosis and Therapy

The basic aim of the new Institute of Physiology and Pathology of Women (Institut Fiziologii i Patologii Zhenshchiny) established at Tbilisi by the Georgian S.S.R. Ministry of Health, first of its kind in the Soviet Union, is to increase the birth rate. It seeks to decrease the incidence of abortions and find solutions to infertility (*Anon. 11, 102*).

To detect the presence of cancer in the organism, a Czechoslovakian news report asserts, A. Chizhevskiy, of the oncological institute in Karaganda, has devised a mathematical formula for the movement of blood cells in the veins (*Anon. 5, 63*).

Tetraethylmonothiopyrophosphate was administered subcutaneously in a dose of 0.06 mg/kg. to mice suffering traumatic injury to the sciatic nerve, and induced recovery two to three times more rapidly than in controls. The application of the chemical in victims of poliomyelitis was mentioned as a possibility (*Lenkevich 11, 75*).

Animal experiments indicate that muscles repair and restore themselves more rapidly if supplied with a direct deposit of minced muscle tissue (*Gavrilova 11, 95*).

A transistorized transmitter, 610 grams, 4.4 x 9 x 14 cm., was built by the Institute for Applied Physiology of the East German Academy of Social Hygiene, Labor Hygiene, and the Advanced Training of Physicians, Berlin. It is used for obtaining electrocardiographs (*Frucht 14, 79*).

Tape recordings are being used to hypnotize

some patients in the psychotherapeutic department, headed by Dr. Wicht, in the polyclinic of the Friedrich-Schiller University of Jena, which celebrated its 400th anniversary in 1958 (*Anon. 7, 94*).

Use of radiophosphorus to diagnose breast cancer produced some evidence that absorption of phosphorus by the malignant tumor depends on the intensity of the processes of renewal of the nucleic acids in the growing area (*Dmitriyeva 4, 66*).

A Czechoslovakian spray gun for treatment of second-degree burns uses a mixture of thrombin, antibiotic, plasma, and oxygen to form a film (*Bares 10, 86*).

Ordinary gypsum, used in therapy of burns, is reported to be an excellent physical antiseptic, also eliminating pain in the burned area and preventing plasmorrhaxis. It was applied to 264 patients at the surgery clinic of the Odessa Institute for the Advanced Training of Physicians. Burns of 34 patients covered more than 40 percent of the body (*Mel'nik 8, 66*).

Eradication of schistosomiasis by mass treatment is a near-term objective of the People's Republic of China (*Kochergin 11, 99*).

Artificial teeth were implanted in jawbones of unspecified animals. Connective tissue grew in the canals of the plastic roots and ossified. Attempts at implants in humans were not successful, but experiments with nonirritating alloys are in preparation (*Bazhanov 1, 76*).

### Laboratory Services

Dead or alive, rickettsiae are made visible for study by fluorochromes and special optical apparatus. Clearest contrast and most intensive luminescence was achieved by staining the organisms with rivanol or auramine in an aqueous solution, one part to a thousand (*Mitтерева 4, 44*).

For observing ornithosis virus particles by means of fluorescence under a microscope, an aqueous solution of acridine orange (1:30,000) is reported to be the most effective dye. A bright green light contrasts with dull luminescence in other formations (*Neustroyev 16, 69*).

Luminescent microscopy, employing fluores-

cent dyes, used in observing agents of herpes, hoof-and-mouth disease, lymphogranuloma, swine plague, chickenpox, shingles, encephalitis, psittacosis, and other viral diseases, has been employed also in the study of tickborne encephalitis. The process is described in translation in detail. An illustration of the apparatus and two electrophoregrams are included in the original paper (*Izotov 8, 68*).

### Information Services

It is proposed to expand and expedite publication of reports of Soviet research in radiobiology: fewer than a third of the reports sub-

mitted in 1956 and 1957 have been printed (*Anon. 3, 65*).

Soviet participation in international medical programs has resulted in a rise in their contributions to Western journals and an increased attendance at international conferences. Nearly 2,000 abstracts of works by Soviet specialists have been published in *Excerpta Medica*, and 6 special editions of that journal have been devoted to Soviet works (*Ivanova 7, 88*).

Continuous courses have been organized for raising the qualifications of sanitation physicians, chemists, bacteriologists, laboratory assistants, and workers of sanitary-epidemiological stations (*Anon. 7, 91*).

## Translations From Russian Medical Works

The Russian Scientific Translation Program, set up in the National Institutes of Health, Public Health Service, in July 1956, distributed 42 completely translated issues of several Soviet journals to 400 research libraries during 1958. The issues represent a total of 1,470 papers in biochemistry, biophysics, experimental biology and medicine, microbiology, epidemiology, immunology, hematology and blood transfusion, oncology, virology, and physiology.

From the program's inception until October 1957, the activities concerned principally the supply of supplementary materials to scientific groups for their independent evaluation of Soviet experimental work. During fiscal 1958 the emphasis shifted to materials for evaluation, field by field. Future plans include a mechanism to gauge both the needs of the scientific fields for information and the adequacy of the program in fulfilling those needs.

The cover-to-cover translation of basic science journals is a major feature of the program.

Another activity has produced 2,990 abstracts of Soviet medicine in four quarterly issues for both basic medical sciences and

clinical medicine. Another 5,100 more abstracts are in prospect.

The program also provides grants to support preparation of reviews of Soviet literature by American scientists in such fields as cardiovascular physiology, neurochemistry, nutrition, defectology, and air pollution. Also, a list of 300 Russian scientific review papers were sent to about 150 editors of American journals, many of whom requested translation of listed papers. Republication of some papers is scheduled in a number of journals.

Reference works, such as the "Directory of Medical and Biological Research Institutes of the U.S.S.R.," "A Guide to Russian Medical Literature," and a "Russian-English Medical Dictionary," are products of the program, which is also planning the publication in English of selected Russian monographs.

The "Bulletin of Translations From Russian Medical Sciences" lists available translations and services and gives pertinent information about other translation programs, Government and private.

Address inquiries to the Russian Scientific Translation Program, National Institutes of Health, Public Health Service, Bethesda, Md.